

REMARKS

These remarks are in response to the Office Action mailed April 7, 2004.

Allowable Subject Matter

Claims 8, 21, and 26 stand objected to as being dependent on a rejected base claim, but the Examiner has indicated that they would be allowable if rewritten in independent form. These claims have therefore been so rewritten.

Terminal Disclaimer

Claims 1-7 stand rejected under the judicially created doctrine of double patenting. Applicant files herewith a terminal disclaimer obviating the basis for this rejection.

Title

The Examiner has required a new, more descriptive title, and the title has been amended to read "INKJET PRINTING SYSTEM WITH INTERLEAVING OF SWATHED NOZZLES."

Specification

Claim 14 stands objected to as informal, because the phrase "different pass" should read "different passes." Claim 14 has been amended to correct this informality.

Claim 1

The invention, as now presented in amended claim 1, includes a continuous ink jet printer in which a first deflection element deflects ink drops from a first nozzle by different amounts such that differently deflected drops are deposited in a swathed pattern. A second deflection element is also operative to deflect drops by different amounts such that differently deflected drops are deposited in a swathed pattern. At least one drop from the first nozzle is interleaved with drops from the second nozzle.

This aspect of the invention can allow for the inexpensive implementation of high-speed, high-quality printers. This is because a printer that deflects deposited drops by different amounts in a swathed pattern can quickly distribute ink over a wide area with just a few nozzles. The printer can then fill in the gaps after the ink from earlier passes has dried. The claimed hybrid swathed

interleaving technique can therefore improve speed, because it allows drops to be deposited over a relatively wide area, and it can at the same time improve print quality, by widely separating drops and thereby preventing them from merging.

Claim 1 stands rejected as anticipated by Tsao. Tsao discloses a printing apparatus in which ink jet streams flow from different nozzles, and break into droplets (see Fig. 1). If there is no charge on one of the droplets, its path is altered as it passes through deflection plates so that it strikes a recording medium. If the droplet has been charged for non-printing, the deflection plates deflect the charged droplet so that it will not strike the recording medium, and it will instead be deposited in a gutter (col. 4, lines 32-52).

But Tsao does not disclose the concept of interleaving ink drops deflected by different amounts such that differently deflected drops are deposited in a swathed pattern. Tsao instead teaches that drops can either be deposited in a gutter or on a page. Tsao therefore fails to disclose the invention as now claimed in amended claim 1, and the anticipation rejection should be withdrawn.

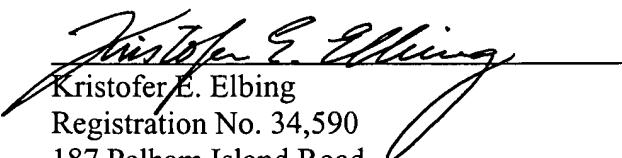
Nor is there any suggestion in the prior art of record to modify the Tsao reference in such a way as to obtain the invention as now claimed in amended claim 1. Nowhere does Tsao disclose the concept of differently deflecting drops to achieve a swathed operation. Instead, Tsao teaches the use of one or more arrays of nozzles, with one embodiment employing an array of eleven nozzles. This array-based approach fails to disclose or suggest the inventive concept embodied in claim 1 as now amended, or its advantages.

Independent claims 22 and 25 also distinguish over the prior art of record for at least reasons similar to those advanced in support of claim 1.

The remaining claims are dependent, and should be allowable for at least the reason that they depend on an allowable claim. This application should therefore now be in condition for allowance and such action is respectfully requested. The Commissioner is hereby authorized to charge any additional fees that may be required, or credit any overpayment, to Deposit Account No. 50-0750.

Respectfully submitted,

October 7, 2004
Dated


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